REMARKS

I. Introduction

Claims 55-64, 67-78, 81-92, 94-105, 107-117 and 119-133 are pending in the present application. Claims 65, 66, 79, 80, 93, 106 and 118 have been cancelled without prejudice. Claims 55, 68, 69, 82, 83, 87-89, 96, 97, 109, 110, 120, 121 and 124 have been amended and claims 127-133 are new. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Rejection of Claims 55-126 Under 35 USC §102(b)

Claims 55-126 were rejected under 35 U.S.C. 102(b) as anticipated by German Patent No. 3435883 ("Heilmann et al."). Applicants respectfully submit that Heilmann et al. do not anticipate the present claims for the following reasons.

Claims 55, 68, 69, 82, 83, 96, 97, 109, 110, 120, 121 and 124 relate to, or recite the feature of, an end cap for a filter device. These claims have been amended herein, without prejudice, to recite that the members and the end cap are a single structural component and extend away from an upper interior surface of the end cap. Support for these amendments can be found, for instance, in Figures 8, 11 and 12 which illustrate end cap 30 and ribs 14 as a single component. Figures 8, 11 and 12, also illustrate the upper interior surface of the end cap and the ribs extending away from this upper interior surface and towards the hollow fiber bundle. Support is also shown, e.g., in the Specification, which states at page 6, lines 11-14 that, the "end caps are designed as injection molded parts ... with numerous different embodiments conceivable." An end cap produced as an injection molding part is typically a single structural component. Further support is shown, e.g., in the Specification at page 4, lines 27-31, wherein it is stated that "guide elements are provided in the areas adjacent to the . . . channel, so that the direction of flow of the fluid leaving the channel can be influenced by these guide elements." Support is also found, e.g., at page 10, lines 15-20 which states that a "distance between ribs 14 and the casting compound of the filter is advantageously designed ...". Because there is a "distance" between the ribs and the casting compound—and there is no other member situated between the upper interior surface of the end cap and the casting compound—it is clear, as further evidenced in the aforementioned figures, that the ribs extend from the upper interior surface of the end cap.

It is respectfully submitted that Heilmann et al. does not anticipate the present claims for at least the reason that Heilmann et al. fail to disclose, or even suggest, all of the claimed features of each claim. For instance, it is respectfully submitted that Heilmann et al. fail to disclose, or even suggest, that the members and the end cap are a single structural component as recited in the aforementioned claims. Further, it is respectfully submitted that Heilmann et al. fail to disclose, or even suggest, that the members extend away from an upper interior surface of the end cap as recited in the aforementioned claims.

In contrast, Heilmann et al. disclose in Figures 1 to 3 a flat, perforated disk 46 that is interposed between the inlet side 28 of an end cap 30, e.g., having a neck 26, and an outlet side 32 of the end cap 30, e.g., in which a filter element 20 is located. The flat disk 46 has guiding means 50 located on a surface facing the inlet side 28 of the end cap 30. As shown in Figure 1 and 3, the flat perforated disk 56 is spaced apart from the upper interior surface of the interior chamber of the end cap. Clearly the flat perforated disk 56 is not formed as part of the end cap such that the end cap and the perforated disk are a single structural component. Instead, as indicated above and as clearly shown in Figure 3, the perforated disk 56 is a separate structural component that is installed in the end cap and rests on an annular notch 74 located on the side surface of the end cap thereby by forming two flow chambers 42 and 44. Accordingly, the perforated disk 56 and its guiding means 56 due not extend away from the upper interior surface of the end cap but instead extend away from the surface of the perforated disk 56, which acts as a separate structural component.

The Office Action cites *In re Larson* for the proposition that "'the use of a one piece construction instead of the structure disclosed in [the prior art] would be merely a matter of obvious engineering choice.'" Office Action at page 3 citing *In re Larson*, 340 F.2d 965, 968 (CCPA 1965). In *In re Larson*, the Court found that omission of additional framework and axle which served to increase the cargo carrying capacity of prior art mobile fluid carrying unit would have been obvious if this feature was not desired. *In re Larson*, 340 F.2d at 968. As set forth in MPEP 2144.04, wherein *In re Larson* is cited, the omission of an element and its function is obvious if the function of the element is not desired. However, MPEP 2144.04 goes on to state:

> **the omission of an element and retention of its function is an indicia of unobviousness.** *In re Edge*, 359 F.2d 896, 149 USPQ 556 (CCPA 1966) (Claims at issue were directed to a printed sheet having a thin layer of erasable metal bonded directly to the sheet wherein said thin layer obscured the original print until removal by erasure. The prior art disclosed a similar printed sheet which further comprised an intermediate transparent and erasure-proof protecting layer which prevented erasure of the printing when the top layer was erased. The claims were found unobvious over the prior art because ... although the transparent layer of the prior art was eliminated, the function of the transparent layer was retained since appellant's metal layer could be erased without erasing the printed indicia.). *Emphasis added.*

The claims of the present invention eliminate the element of flat disk 46, as disclosed in Heilmann, by the members and end cap being a single structural unit. However, the function of flat disk 46—distributing a fluid—has been retained by the members and end cap acting as

a single structural unit. See, e.g., Figures 8, 11 and 12 and the Specification, page 4, line 27 to page 5, line 7 and page 10, lines 11-17, wherein the members and the end cap are shown as a single structural unit and are described as distributing a fluid. Accordingly, as set forth in MPEP 2144.04, and *In re Edge*, the omission of flat disk 46 while retaining the function is indicia of unobviousness, NOT obviousness.

The Office Action's assertions regarding product-by-process claims are not applicable to the claims currently under consideration. Regardless of whether or not the current claims are considered product-by-process claims, the *In re Thorpe* doctrine asserted in the Office Action, pages 3-4, is moot. Independent of a process, the actual apparatus disclosed in the claims is distinguishable from the device disclosed in Heilmann et al. in that, as set forth above, the members and the end cap are a single structural component with the members extending away from an upper interior surface of the end cap.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully submitted that Heilmann et al. do not disclose, or even suggest, all of the features recited in claims 55, 68, 69, 82, 83, 96, 97, 109, 110, 120, 121 and 124.

All of the remaining claims ultimately depend from and include all of the limitations of a respective one of the above-mentioned independent claims. It is respectfully submitted that Heilmann et al. do not anticipate any of these dependent claims for at least the same reasons given above in support of the respective independent claims.

III. Rejection of Claims 55-67, 69, 70, 71, 76-81, 83-95, 97-99, 101, 104-108, 121 and 124 Under 35 USC §102(b)

Claims 55-67, 69, 70, 71, 76-81, 83-95, 97-99, 101, 104-108, 121 and 124 were rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 4,885,089 ("Hankammer"). Applicants respectfully submit that Hankammer does not anticipate the present claims for the following reasons.

It is respectfully submitted that Hankammer does not anticipate the present claims for at least the reason that Hankammer fails to disclose, or even suggest, all of the claimed features of each claim. The Office Action states, at page 7, that "the Hankammer reference ... reads on to the claims as shown, and therefore, it anticipates the claims." The Office Action fails to provide support for this position and fails to address Applicant's arguments. Indeed, Applicant's arguments are unassailable. It is strenuously asserted that

Hankammer fails to disclose, or even suggest, a channel that defines a fluid flow path in a generally axial direction as recited in claims 55, 69, 83, 97, 121 and 124. In contrast, Hankammer describes "[a] distributor cap [that] consists essentially of the umbrella-shaped bottom section 15, the vanes 4 mounted beneath, and the hollow cone 9 acting as handle and vent." Column 4, lines 3-6. The Office Action states that "Hankammer teaches an end cap for a filter ... comprising a generally axial inlet flow path (9)." Office Action at page 4. Thus, the Office Action identifies the hollow cone 9 as a generally axial inlet fluid flow path. However, this hollow cone 9 does not provide a channel that defines a fluid flow path in a generally axial direction because the hollow cone 9 is a **vent** which acts as an **outlet for air**. Specifically, Hankammer states that "FIG. 2 also shows the central venting duct 11 of the hollow cone 9," column 4, lines 9-10, and most importantly, that "[v]enting duct 11 has the function of venting the sealing screen 2 and hollow cone 10." Column 4, lines 45-47, emphasis added. Thus, the hollow cone 9 does not function as a fluid flow path.

The Office Action also states that "[t]he argument about the water jet is misplaced: this description is for the intended use of the reference." Office Action, page 7. Applicant respectfully disagrees. The recitation in Hankammer that "a water jet arriving from above cannot impact directly on the sealing screen and filter material beneath it ..." is a structural limitation. Column 4, lines 23-27. This structural limitation explicitly contradicts the Examiner's contention that the hollow cone 9 can function as a fluid flow path. Hankammer clearly describes a fluid entering the device from the sides and the hollow cone as a vent for air. Column 4, lines 45-47. Column 4, lines 29-33. Thus, Applicant's statement is not directed at an intended use but rather a structural limitation that belies the description of the Hankammer device as presented in the Office Action.

As for claims 56-67, 70, 71, 76-81, 84-95, 98-99, 101 and 104-108, each of which ultimately depends from and include all of the limitations of a respective one of independent claims 55, 69, 83 and 97, it is respectfully submitted that Hankammer does not anticipate these dependent claims for at least the same reasons given above in support of the patentability of claims 55, 69, 83 and 97.

IV. Rejection of Claims 55-67, 69-81, 83-95, 97-108, 110-119 and 121-126 Under 35 U.S.C. § 103(a)

Claims 55-67, 69-81, 83-95, 97-108, 110-119 and 121-126 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,201,673 ("Kanno et al.") in view of Hankammer. Applicants respectfully submit that the combination of Kanno et al. and Hankammer does not render obvious the present claims for the following reasons.

The Office Action asserts that "[o]ne would use the teaching of Hankammer in the teaching of Kanno because Kanno recognizes the need for proper distribution of blood without channeling and Hankammer teaches an improved structure for obtaining such distribution ...." Office Action, page 6. It is respectfully submitted that the combination of Kanno et al. and Hankammer does not render obvious the present claims because a person of ordinary skill in the art would not have been motivated to combine the teachings of Kanno et al. and Hankammer. As discussed in further detail below, Kanno et al., is directed to diverting the flow of dialysate by a deflection member position inside the casing of a dialyzer. See, e.g., Figure 3 and column 2, lines 18-21. The portion of Kanno et al. cited in the Office Action as providing a suggestion to combine, column 3 line 45 to column 4 line 39, teaches proper blood distribution as a function of the length of the inlet port, column 4, lines 18-24, or as a function of a volume ratio, column 4, lines 25-33. There is no suggestion in Kanno et al. that proper blood distribution would be achieved by using a structure as disclosed in Hankammer. In fact, Hankammer is directed to a totally different invention—a cap with a vent hole that is used to disperse water flowing into the sides of the cap and into a water filter. Moreover, the device of Kanno et al. is not suitable to permit fluid flow in the manner in which fluid flows in Hankammer, i.e., through the sides of the device. The Office Action fails to identify where the prior art suggests the desirability of the asserted combination. Accordingly, it is respectfully submitted that the Office Action has failed to establish a prima facie case of obviousness under 35 U.S.C. § 103(a).

Additionally, Kanno et al. could not be combined with Hankammer because such a combination would render Kanno et al. inoperable. Quoting from *In re Keller*, and as cited in the MPEP 2145, the Office Action argues at page 7 that:

> the test for obviousness is not whether the features of the secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. . [r]ather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

However, MPEP 2145 goes on to state "the claimed combination cannot change the principle of operation of the primary reference or render the reference inoperable for its intended purpose." See MPEP § 2143.01. Clearly the asserted combination of Kanno et al. and Hankammer does just this.

The principle of operation of Kanno et al. is

> to provide a dialyzer having hollow fibers, wherein a **dialysate** can come into as uniform a contact as possible

> with all the hollow fibers, thereby to elevate dialysis efficiency. Column 1, lines 62-65. *Emphasis added.*

The Kanno et al. reference goes on to explain that this is accomplished by

> a **dialysate deflection or dispersion member** disposed in the vicinity of at least the **dialysate inlet and outlet ports** for dispersing a flow of **dialysate.** Column 2, lines 18-21. *Emphasis added.*

This is shown in Figure 3 of the Kanno et al. patent where support member 27 acts to disperse the dialysate. In order to achieve this function Kanno et al. requires a blood inlet flow in an axial direction through an axial inlet pipe. See, e.g., Figures 2 and 3, column 4, lines 3-17. As described above, the apparatus shown in Hankammer requires a flow from the sides and does not have an axial inlet. Thus, the device disclosed in Hankammer would not permit an axial inlet flow of blood and would therefore change the principle of operation of Kanno et al. and render it inoperable for its intended purpose. In light of the foregoing, Applicant respectfully maintains that a person of ordinary skill in the art would not have been motivated to use the arrangement of Hankammer in the device of Kanno et al.

For at least the foregoing reasons, it is respectfully submitted that the combination of Kanno et al. and Hankammer do not render unpatentable claims 55-67, 69-81, 83-95, 97-108, 110-119 and 121-126.

V. New Claims 127-133

New claims 127-133 depend from either claim 83 or claim 110 and are therefore allowable for at least the same reasons that claims 83 and 110 are allowable. Additionally, claim 127 further includes the limitation wherein a portion of the channel adjacent to the interior chamber is curved; claim 128 includes the further limitation wherein the cross-sectional area of the channel in claim 127 decreases in the direction of fluid flow; claim 129 includes the further limitation wherein a portion of the channel adjacent to the interior chamber forms a circle; claim 130 includes the further limitation wherein a portion of the channel adjacent to the interior chamber forms a semicircle; claim 131 includes the further limitation comprising an inlet extending radially from the channel; claim 132 includes the further limitation comprising an inlet in fluid connection with the channel and extending in a general radial direction; and claim 133 further includes the limitation wherein the end cap further comprises a connection for a flow space formed by an interior of the casing and an exterior of hollow fibers in the hollow fiber bundle, the connection providing fluid communication between the exterior of the end cap to the flow space and extending in a generally radial direction. No new matter has been added herein by the addition of the new claims. Support for these claims can be found, e.g., in Figures 1-11 and in the specification at

page 3, lines 3-12 and 10-21; page 4, lines 4-27; and page 5, line 8-33; page 6, line 15-28 and page 8 line 1 to page 10 line 31. In view of the foregoing amendments and remarks, it is respectfully submitted that all of the presently pending claims are allowable.

V. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

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